SIXTH MEETING ON ANALYSIS AND FORMATION OF N-NITROSO COMPOUNDS

Budapest, Hungary, 16-19 October 1979

Bruce Costum

AGENDA

TUESDAY 16 OCTOBER

9.00 Welcoming address - M. Börzsönyi, K. Lapis

Opening address - J. Higginson

Chemistry and Formation *Rapporteur:* T. Fazio

Chairman: H. Egan

1 9.20 - 9.40 CHOW, Y.L. & POLO, J.

Nitrosamides derived from peptide models: their preparations and chemical behaviour

2 9.40 - 10.00 LOEPPKY, R.N., McKINLEY, W.A., HAZLITT, L.G., BEEDLE, E.C., DeARMAN, S.K. & GNEWUCH, C.T.

The fragmentation and transformation of β-oxidized *N*-nitrosamines in relation to their analysis and occurrence

3 10.00 - 10.20 HALLETT, G., JOHAL, S.S., MEYER, T.A. & WILLIAMS, D.L.H.

Reactions of nitrosamines with nucleophiles in acid solution

4 10.20 - 10.40 CHALLIS, B.C., OUTRAM, J.R. & SHUKER, E.G.

New pathways for the rapid formation of *N*-nitrosamines under neutral and alkaline conditions

Chairman: L. Keefer

5 11.00 - 11.20 LYLE, R.E., FRIDUSH, H.M., SARACOGLU, O., BARTON, R., JASHAWAY, N., JACOBSON, M.K. & LYLE, G.G.

Interaction of polyhydroxy compounds and nitrosamines

6 11.20 - 11.40 OKADA, M., MOCHIZUKI, M., ANJO, T., SONE, T., WAKABAYASHI, Y. & SUZUKI, E.

Formation, deoxygenation and mutagenicity of α-hydroperoxydialkylnitrosamines

1003723880

Source: https://www.industrydocuments.ucsf.edu/docs/gplk0000

7 11.40 - 12.00 CROISY, A., FANNING, J., KEEFER, L. & UIM, S.J.

~~Electrophilic promotion of N-nitrosation reactions:~~
~~a progress report~~
NEW TITLE

8 12.00 - 12.20 MICHEJDA, C.J., KOEPKE, S.R. & KUPPER, R.

Formation and chemistry of α- and β-oxidized nitrosamines

Chairman: R. Lyle

Kinetics of nitrosamin

9 14.30 - 14.50 KRULL, I.S., HOFFMAN, G. & FINE, D.H.

The reactions of organic nitro compounds with secondary amines leading to the ~~formation of~~ *N*-nitrosamines and *N*-nitramines

10 14.50 - 15.10 NEBELIN, E., PILLAI, S., LUND, E. & THOMSEN, J.

On the formation of *N*-nitrosopyrrolidine from potential precursors and nitrite

11 15.10 - 15.30 EPSTEIN, S.S., IQBAL, Z.M. & JOHNSON, M.D.

In vivo nitrosation of morpholine in mice by inhaled NO_2

12 15.30 - 15.50 SINGER, G.M.

The mechanism of nitrosation of tertiary amines

Chairman: E.A. Walker

13 16.10 - 16.30 KIM, Y.-K., TANNENBAUM, S.R. & WISHNOK, J.S.

Nitrosation of dialkylamines in the presence of bile acid conjugates

14 16.30 - 16.50 GROENEN, P.J., de COCK-BETHBEDER, M.W., BOUMAN, J. & DHONT, J.H.

Formation of *N*-nitrosamines and *N*-nitrosamino acids from food products and nitrite under simulated gastric conditions

15 16.50 - 17.10 ZIEBARTH, D. & TEICHMANN, B.

Nitrosation of some drugs and its inhibition under simulated stomach conditions

16 17.10 - 17.30 KUBACKI, S.

The formation chemistry and stability of *N*-nitrosocarbaryl under simulated stomach conditions

1003723881

Source: https://www.industrydocuments.ucsf.edu/docs/gplk0000

WEDNESDAY 17 OCTOBER

Chemistry and Formation (cont.) *Rapporteur:* B. Challis

Chairman: C. Rappe

17 9.00 - 9.20 MERGENS, W.J. & NEWMARK, H.L.

The influence of ascorbic acid and alpha-tocopherol on the formation of nitrosamines in an *in vitro* gastrointestinal model system

18 9.20 - 9.40 PIGNATELLI, B., FRIESEN, M. & WALKER, E.A.

The role of phenols in catalysis of nitrosamine formation

19 9.40 - 10.00 MIRVISH, S.S., KARLOWSKI, K., SAMS, J.P. & BIRT, D.F.

Dietary and other factors affecting nitrosomethylurea (NMU) formation in the rat stomach

20 10.00 - 10.20 TANNENBAUM, S.R.

Intestinal formation of nitrite and *N*-nitroso compounds

21 10.20 - 10.40 MASSEY, R.C., DENNIS, M.J., CREWS, C., DAVIES, R. & McWEENY, D.J.

Model system studies on *N*-nitrosamine formation in relation to cured meat: the non-polar phase and *S*-nitroso peptides

Chairman: G. Eisenbrand

22 11.00 - 11.20 ARCHER, M.C., HANSEN, T.J. & TANNENBAUM, S.R.

Compounds formed by treatment of corn (*Zea mays*) with nitrous acid

23 11.20 - 11.40 KANN, J.M., TAUTS, O.V., KALVE, R.E., MAGI, K.K. & BOGOVSKI, P.A.

Potential formation of *N*-nitrosamines in the course of the technological processing of some foodstuffs

24 11.40 - 12.00 ROLLER, P.P., KEEFER, L.K. & SLAVIN, B.W.

Inhibitory agents and chemical mechanisms in the dihalomethane mediated nitrosation of amines with solid nitrite

25 12.00 - 12.20 JØRGENSEN, K.A. & LAWESSON, S.-O.

The reaction of *N*-nitroso compounds with the dimer of *p*-methoxyphenylthionophosphine sulfide. New aspects of the destruction of the *N*-nitroso function

10037238882

Source: https://www.industrydocuments.ucsf.edu/docs/gplk0000

Analysis — *Rapporteur:* D. Fine

Chairman: T. Juszkiewicz

26 14.30 - 14.50 CHEN, C.B., HECHT, S.S., McCOY, G.D. & HOFFMANN, D.
Assays for metabolic α-hydroxylation of *N'*-nitrosonornicotine and *N*-nitrosopyrrolidine and the influence of modifying factors

27 14.50 - 15.10 FINE, D.H., GOFF, E.U., KRULL, I.S. & ROUNBEHLER, D.P.
Some recent advances in the analysis of *N*-nitrosamines

28 15.10 - 15.30 FAZIO, T.E., HAVERY, D.C. & HOWARD, J.W.
Determination of volatile *N*-nitrosamines in foodstuff:
I - A new technique for confirmation by GC-MS
II - A continued survey of foods and beverages

29 15.30 - 15.50 HOTCHKISS, J.H., LIBBEY, L.M., BARBOUR, J.F. & SCANLAN, R.A.
Combined GC/TEA and GC/MS/DS techniques for the µg/kg estimation and confirmation of volatile *N*-nitrosamines in foods

Chairman: T. Kawabata

30 16.10 - 16.30 RHOADES, J.W., HOSENFELD, J.M., TAYLOR, J.M. & JOHNSON, D.E.
Comparison of analysis of wastewaters for *N*-nitrosamines by various detectors

31 16.30 - 16.50 WALTERS, C.L., HART, R.J., KEEFER, L.K. & NEWBERNE, P.M.
The sequential determination of nitrite, *N*-nitroso compounds and nitrate and its application

16.50 - 17.30 General discussion on chemistry, formation and analysis

THURSDAY 18 OCTOBER

Occurrence — *Rapporteur:* M. Castegnaro

Chairman: W. Lijinsky

32 9.00 - 9.20 SEN, N.P., SEAMAN, S. & McPHERSON, M.
Further studies on the occurrence of volatile and nonvolatile nitrosamines in foods, and some recent improvements in the methodology for nitrate and nitrite in foods and animal feeds

33 9.20 - 9.40 SPIEGELHALDER, B., EISENBRAND, G. & PREUSSMANN, R.
Occurrence of volatile nitrosamines in food: a survey of the West German market

10037238B3

Source: https://www.industrydocuments.ucsf.edu/docs/gplk0000

9.40 - 10.00 KAWABATA, T., UIBU, J., OHSHIMA, H., MATSUI, M., HAMANO, M. & TOKIWA, H.

Occurrence, formation and precursors of *N*-nitroso compounds in Japanese diet

10.00 - 10.20 HOFFMANN, D., ADAMS, J.D., PIADE, J.J. & HECHT, S.S.

Analysis of volatile and tobacco specific nitrosamines in tobacco products

10.20 - 10.40 ZWEIG, G., SELIM, S., HUMMEL, R., MITTELMAN, A., WRIGHT, D.P., Jr, LAW, S.C., Jr & REGELMAN, E.

Analytical survey of *N*-nitroso contaminants in pesticide products

Chairman: D. Hoffmann

11.00 - 11.20 RAPPE, C. & RYDSTROM, T.

Occupational exposure to *N*-nitroso compounds

11.20 - 11.40 FAJEN, J.M. rubber, petrol, tanning industry, machinery operators

N-Nitroso compounds in the factory environment

11.40 - 12.00 BARTHOLOMEW, B.A., HILL, M.J., HUDSON, M.J., RUDDELL, W.S.J. & WALTERS, C.L.

Gastric bacteria, nitrate, nitrite and nitrosamines in patients with pernicious anaemia and in patients treated with cimetidine

12.00 - 12.20 KOWALSKI, B., MILLER, C.T. & SEN, N.P.

Studies on the *in vivo* formation of nitrosamines in rats and humans after ingestion of various meals

~~12.20 - 12.40 BRUCE, W.R., DION, P., WANG, S., BOYD, N. & BRIGHT-SEE, E.~~

Dietary factors and levels of fecal mutagens and nitrosamines

Posters

Rapporteurs: S. Hecht
C.L. Walters
L. Griciute

Chairman: P. Bogovski

14.30 - 16.00 Poster session*

16.00 - 17.30 Discussion on posters

* List of posters given separately

100723884

Source: https://www.industrydocuments.ucsf.edu/docs/gplk0000

FRIDAY 19 OCTOBER

Experimental Pathology — *Rapporteur:* S. Vesselinovitch

Chairman: K. Lapis

42 9.00 - 9.20 VESSELINOVITCH, S.D.
Infant mouse as a sensitive bioassay system for carcinogenicity of *N*-nitroso compounds

43 9.20 - 9.40 EISENBRAND, G., HABS, M., PREUSSMANN, R. & SCHMAHL, D.
Dose-response study with *N*-nitrosopiperidine and single-dose carcinogenicity experiment with *N*-nitroso-3-hydroxypyrrolidine

44 9.40 - 10.00 SUGAR, J., SZENTIRMAY, Z. & KRALOVANSZKY, J.
Pathological features of *N*-methyl-*N'*-nitro-*N*-nitrosoguanidine (MNNG) induced neoplastic and preneoplastic lesions of rat stomach

45 10.00 - 10.20 BORZSONYI, M., SURJAN, A., PINTER, A., TOROK, G., CSIK, M., TAMAS, J., FETTER, J. & FERENCZ, A.
Endogenous formation of *N*-nitrosomorpholine from a new fungicide

46 10.20 - 10.40 WARZOK, R., MENDEL, J., THUST, R., SCHWARZ, H. & SCHNEIDER, J.
Physico-chemical, mutagenic and carcinogenic properties of nitrosated urea herbicide metabolites

Chairman: R. Preussmann

47 11.00 - 11.20 FONG, L.Y.Y., WONG, F.W.T. & CHAN, W.C.
Does *in vivo* *N*-nitrosamine formation in chronic urinary tract infection increase cancer incidence in the rats?

48 11.20 - 11.40 SANSONE, E.B., LOSIKOFF, A.M. & LIJINSKY, W.
The penetration of rat skin by some nitrosamines of environmental importance

49 11.40 - 12.00 SIMON, K., TAJTI, L. & LAPIS, K.
Hepatic lesions of *lebistes reticulatus* induced by DENA

50 12.00 - 12.20 BOGOVSKI, P.
Principles of prevention of formation and action of carcinogenic *N*-nitroso compounds

12.20 - 12.40 Discussion

12.40 Close of meeting.

10037238B5

Source: https://www.industrydocuments.ucsf.edu/docs/gplk0000

Posters to the topic: *Chemistry and Formation*

51 CONTOUR, J.P., GUERIN, I. & MOUVIER, G.

Adsorption of nitrogen dioxide and nicotine over asbestos. Formation of adsorbed *N*-nitroso compounds

52 JANZOWSKI, C., KLEIN, R. & PREUSSMANN, R.

Formation of *N*-nitroso compounds of the pesticides atrazine, simazine and carbaryl with nitrogen oxides

53 ROPER, H.

Synthesis of monosaccharide-nitrosamines

54 IQBAL, Z.M., KRULL, I.S., MILLS, K., FINE, D.H. & EPSTEIN, S.S.

Kinetics of nitrosamine formation in mice following oral administration of trace-level precursors

Posters to the topic: *Analysis*

55 CASTEGNARO, M. & WALKER, E.A.

Report on collaborative studies on determination of volatile nitrosamines in cheese and pesticides

56 FELLION, Y., de SMEDT, J. & BRUDNEY, N.

An HPLC-UV method for the direct evaluation of NDELA in some cosmetic products and raw materials

Posters to the topic: *Occurrence*

57 ISSENBERG, P. & SWANSON, S.E.

Monitoring exposure of personnel to volatile nitrosamines in the laboratory environment

58 PEDERSEN, E., THOMSEN, J. & WERNER, H.

Investigations on formation and occurrence of volatile nitrosamines in Danish cheese

59 TAYLOR, P., BRADDOCK, P. & CARTER, D.

The analysis of *N*-nitrosodimethylamine (NDMA) in antihistamines and cough/cold preparations

60 JUSZKIEWICZ, T., KOWALSKI, B. & PASTUCHA, E.

Occurrence and formation of nitrosamines in animal feeds

61 MIGASENA, P., REAUNSUWAN, W. & CHANGBUMRUNG, S.

Nitrates, nitrites and nitroso compounds in local Thai preserved protein foods

10037238886

Source: https://www.industrydocuments.ucsf.edu/docs/gplk0000

62 PREDA, N. & POPA, L.

Variation of the concentration of *N*-nitroso compounds in meat products processed with minimal nitrite amounts

63 ARMIJO, R.

Stomach cancer and nitrates in Chile

64 JUHASZ, L., HILL, M.J. & NAGY, G.

Possible relationship between nitrate in drinking water and incidence of stomach cancer

65 TUREK, B., HLAVSOVA, D., TUCEK, J., WALDMAN, J. & CERNA, J.

The contribution to the fate of nitrates and nitrites in the organism

66 VARGHESE, A.J., BRUCE, W.R., KREPINSKI, J.J.F. & YATES, P.

WD Isolation and properties of a highly mutagenic *N*-nitroso compound from human feces

67 WALKER, E.A., CASTEGNARO, M., PIGNATELLI, B., CRESPI, M. & MUNOZ, N.

Preliminary report on volatile nitrosamines in gastric juices

Posters to the topic: *Experimental Pathology*

68 LIJINSKY, W.

Comparative carcinogenicity of *N*-nitroso compounds in different species

69 * HECHT, S.S., CHEN, C.B. & HOFFMANN, D.

Metabolism of tobacco specific nitrosamines in rodents and man

70 EMURA, M., RICHTER-REICHHELM, H.-B. & MOHR, U.

Some aspects of prenatal risk to diethylnitrosamine carcinogenesis

71 KOPPANG, N.

A survey over 18 years with experimental feeding of nitrosodimethylamine to domestic animals

72 GINER-SOROLLA, A., ANDERSON, L.M., GREENBAUM, J.H., LAST, K. & BUDINGER, J.H.

N^6-(methylnitroso)adenosine: a carcinogen from a nucleic acid component

73 THUST, R., MENDEL, J., SCHWARZ, H. & WARZOK, R.

Clastogenicity and aberration kinetics of some alkylarylnitrosoureas in Chinese hamster V79-E cells

74 RUSU, M.A., PREDA, N., CRACIUN, C., GADALEANU, V. & BUCUR, N.

Histoenzymological and ultrastructural changes in rats following the administration of aminopyrine and nitrite (nitrosoaminopyrine)

75 SURJAN, A., TOROK, G., BORZSONYI, M., PINTER, A., CSIK, M. & FETTER, J.

Effect of ascorbyl palmitate and chlorogenic acid on the *in vivo* nitrosation of a new pesticide (trimorphamide)

76 GRICIUTE, L.

Investigation on the combined action of NDEA with other carcinogens

10032238827

Source: https://www.industrydocuments.ucsf.edu/docs/gplk0000

In Grateful Appreciation

ALKALOIDA

BAYER AG

CHEMICAL MACHINE WORKS OF BUDAPEST

CHINOIN PHARMACEUTICAL AND CHEMICAL WORKS LTD

CIBA GEIGY AG

EGYT PHARMACEUTICAL WORKS

HOECHST AG

HOFFMANN-LA ROCHE

NEW ENGLAND INSTITUTE FOR LIFE SCIENCES

NITROKEMIA IPARTELEPEK

SCHERING AG

SZESZIPARI VALLALATOK TROSZTJE

TAURUS HUNGARIAN RUBBER WORKS

10037238888

Source: https://www.industrydocuments.ucsf.edu/docs/gplk0000